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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gyudong Kim

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11/28/2005

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EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/989,580

Applicant(s)

KIM ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 24 is/are allowed.
- 6) ☒ Claim(s) 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. This Office action is in response to applicant's paper filed 9/28/2005.
2. Examiner **withdraws** the objection to the specification. The examiner thanks applicant for making the necessary changes.
3. Examiner does **not withdraw** the obviousness rejection to *Checchi* in view of *Jeong* for all the claims. The following comments fully address applicant's arguments with respect to the rejection. In particular, applicant argues a differential signal conveyed on two lines rather than a single line. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As such, *Jeong* teaches differential signal conveyed on two lines, see e.g., figure 1. Applicant also makes the further distinction that using two differential amplifiers, the first (amplifier) subtracts the positive polarity signals (i.e., the positive transmission line signal and the positive polarity transmitter signal) and the second (amplifier) subtracts the negative polarity signals (i.e., the negative transmission line signal and the negative polarity transmitter signal). See applicant's arguments at the bottom of page 12 of their remarks. Upon further review, the examiner agrees that the above further structure is not taught by the references in combination and in particular with respect to figure 1 of *Checchi*. As such, the rejection is **withdrawn** for independent **claims 1, 6, 16, 17, and 24** since applicant's arguments are persuasive. **Claims 18, and 19** do not contain the above further structure. As such, the rejection is maintained for these sets of claims. In addition,

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applicant argues that claims 19, 20, 22, and 23 should be allowed because claims 5 and 12-14 are allowed. These claims are different such that the claims as a whole are considered allowable.

As such, applicant's arguments are not persuasive.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 18, 19, 20, 21, 22, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,549,971 B1 to *Cecchi et al.* ("*Cecchi*") in view of U.S. Patent No. 5,675,584 A to *Jeong et al.* ("*Jeong*").

As to **claim 18**, see e.g., figure 1 of *Cecchi*. In particular, a first differential amplifier is shown e.g., as first amplification stage 100 and a second differential amplifier is shown e.g., as second amplification stage 200. As such, a first differential amplifier (i.e., first amplification stage 100 shown in more detail in figure 2) generates a positive polarity data signals VOUT1 and a second differential application circuit generates a negative polarity signals VOUT2. A common mode rejection is independently controlled in each of the first and second differential amplifiers using bias signals generated in response to an output common mode feedback voltage from the first and second differential amplifiers, see e.g., column 5 with respect to feedback node 122 that provides a negative feedback bias circuit. Finally, an output differential amplifier section that

generates an output logic signal VOUT from the positive polarity signals VOUT1 and the negative polarity signals VOUT2, wherein the output logic signal VOUT represents data received on the transmission line, wherein input noise is suppressed using an asymmetric transfer characteristic that offsets output signal logic levels with regard to input noise, see e.g., top of column 7 with respect for compensating for any asymmetries inherent in the amplification stages. *Jeong* also teaches the front- end circuit as part of figure 1 where the differential signals are V1 and V2 as taught by *Checchi*.

Checchi may be silent or deficient to the further limitation a difference between a positive polarity *transmission line signal* and a positive polarity *transmitter signal* and a difference between a negative polarity *transmission line signal* and a negative polarity *transmitter signal* with respect to a first and second differential amplifier. In particular, *Checchi* discloses a V1 and V2 signal which is differentiated (i.e., a difference between a transmission line signal and a transmitter signal), see e.g., column 3, lines 13-34. However, assuming the above difference is not clear, the examiner also notes the following obviousness rejection as well.

Jeong teaches the further recited limitation above in e.g., figure 1. In particular, *Jeong* teaches a transmission line signal 100 and a transmitter signal 20 with respect to simultaneous transmission, see e.g., column 4, lines 6-32.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Checchi* by clarifying that a transmission signal and transmitter signal are known in the art.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to transmit information simultaneously on a transmission line. In particular, *Jeong* cures the above-cited deficiency by providing a motivation found at e.g., column 4, lines 6-32. Second, there would be a reasonable expectation of success since *Checchi* teaches that the invention is applied to a bus topology as shown e.g., in figure 4 with respect to I/O device 414. Thus the references either in singular or in combination teach the above claim limitation(s). see similar rejection to claim 6.

As to **claim 19**, see similar rejection to claim 18. In addition, see e.g., top of column 7 of *Checchi* as previously mention in the rejection for claim 1 with respect to mismatch of the effective channel lengths. In addition, with respect to noise also see e.g., column 3, lines 12-34 of *Checchi*.

As to **claim 20**, see e.g., the feedback circuit 122 in figure 2 of *Checchi* for either a first or second differential amplifier.

As to **claim 21**, see similar rejection to claim 18.

As to **claim 22**, see similar rejection to claim 18. The different pairs of signals from the transmission line and the transmitter are e.g., V1 and V2 of *Checchi*.

As to **claim 23**, see similar rejection to claim 18.

Allowable Subject Matter

6. **Claims 1-17 and 24** are allowable.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DWF

Derrick W. Ferris
Examiner
Art Unit 2663


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SUPERVISORY PATENT EXAMINER